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Vocal evidence of species rank for nominate Unicolored Tapaculo *Scytalopus unicolor*

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Salvin (1895) named a new species, *Scytalopus unicolor*, based on three specimens from northern Peru, and this species was recognized by later authors (e.g., Cory & Hellmayr 1924). However, during a revision of the genus *Scytalopus* (which formed the basis for the classification of the genus in Peters 1951 and Meyer de Schauensee 1966), Zimmer (1939) combined *unicolor* with four other taxa (*latrans, subcinereus, intermedius*, and *parvirostris*). Of this group, "*unicolor*" was the oldest name, and Zimmer's polytypic species took the name *Scytalopus unicolor*.

The songs of suboscine birds, such as *Scytalopus*, are believed to be entirely innate (Kroodsma 1982, 1984; see also Isler *et al.* 1998). Recent field studies (Whitney 1994, Krabbe & Schulenberg 1997) have shown that almost all *Scytalopus* taxa that were treated as subspecies by Zimmer (1939) should be elevated to species rank, primarily because of their diagnostically different vocalizations. Furthermore, Arctander & Fjeldså (1994) found a positive correlation between vocal and genetic differences in *Scytalopus*, and showed that allopatry and parapatry are no evidence of close relationship.

As part of a re-evaluation of the species limits of *Scytalopus* based on voice,

Krabbe & Schulenberg (1997) showed that *Scytalopus* "*unicolor*" *parvirostris* differed dramatically in voice from *Scytalopus* "*unicolor*" *latrans* and *S.* "*u.*" *subcinereus* (see below), making it clear that *parvirostris* is a separate species. However, vocal data were lacking for *unicolor*, and these authors left *latrans, subcinereus,* and *intermedius* as subspecies of *Scytalopus unicolor*, which was a conservative approach.

In 1998 PC obtained tape recordings of two individuals of nominate *unicolor* near Cajabamba (the type locality for *unicolor*), on the east slope of the Western Andes in southern Depto. Cajamarca, northern Peru. These recent tape recordings (as well as additional recordings of a single bird obtained by Richard Webster and Rose Ann Rowlett, also near Cajabamba, on 20 October 1996) reveal that both song and calls of nominate *unicolor* differ strikingly from those of *latrans*, *subcinereus*, and *parvirostris* (Figs. 1-2).

Distribution

The type series of *S. unicolor* consisted of a pair from Cajabamba (2,750 m), on the east slope of the Western Andes in southern Cajamarca, and of a female from Huamachuco (3,175 m), *c.* 20 km to the south, also on the east slope of the Western Andes, in La Libertad. Zimmer (1939) ascribed specimens from further south on the same slope in La Libertad (Succha, Soquián), at elevations ranging from 2,000 to 3,150 m, to this form, and also included five specimens from Chugur, on the Pacific slope in southern Cajamarca. In addition, Koepcke (1961) identified a male and a female from Sunchubamba, further south on the Pacific slope in Cajamarca, as nominate *unicolor*. As Zimmer (1939) was well aware, its occurrence at Chugur is problematic, as this locality is north of and near Taulis, the type locality of *subcinereus*. *Subcinereus* ranges from 1,500 to 4,000 m in southwestern Ecuador, and also occurs on the Pacific slope in northern Peru south to southern Cajamarca (Nancho). In the vicinity of Huambos, southern Cajamarca, NK has tape-recorded it near the crest of the Western Andes, and apparently it also descends the adjacent east slope of the Western Andes, as two specimens from Cutervo seem to represent this form (see discussion in Krabbe & Schulenberg 1997). The plumage differences between *subcinereus* and *unicolor* are so slight that we hesitate to accept Pacific slope records of *unicolor*, at least until documented by voice.

Intermedius occurs in the Utcubamba drainage in the northern Central Andes, Depto. Amazonas, Peru (type locality La Lejia, 2,743 m). No definite vocal data exist, but tape recordings from within its range (PC) suggest that it might be a distinct species as well. For the moment we leave *intermedius* as a subspecies of *latrans*, which it resembles morphologically more than it does nominate *unicolor*.

Latrans is widely distributed in the Andes of Ecuador, Colombia, and Venezuela, at elevations ranging from 1,500 to 4,000 m. At the type locality on Cerro Munchique in the Western Andes of Colombia, vocalizations are similar to those recorded in inter-Andean and western Ecuador and in the Central Andes of Colombia; birds from the Amazonian slope north of the Río Marañón approach *subcinereus* in the male's black plumage, and in their fairly similar vocalizations. Further studies are needed in

order to delimit their range in Colombia and to establish whether Venezuelan birds belong with them.

Identity of the modern tape-recordings from Cajabamba

We were not able to obtain specimens of the tapaculos tape-recorded at Cajabamba. In view of the potential importance of these recordings to the taxonomy of *Scytalopus* (see below), and the difficulties of field identification of *Scytalopus* based on plumage characters, we here justify our identification of these birds as *unicolor*, with which they agreed in their uniform grey colour.

Species diversity of *Scytalopus* on the western cordillera of the Andes of southwestern Ecuador and northwestern Peru is low. Throughout much of this region, from southern Loja south to Cajamarca, only a single taxon (*subcinereus*) is found. Locally in Cajamarca there are records of *affinis*, which is also found farther south in Ancash (where it is the only *Scytalopus* recorded). We show below that the vocalizations of the Cajabamba population differ dramatically from those of *subcinereus*, making it very clear that these do not represent the same taxon. The vocalizations of *affinis* are also quite distinct from those of the Cajabamba population (see Figs. 30 and 31 in Krabbe & Schulenberg (1997)).

B. Whitney, commenting on an earlier draft of this manuscript, suggested that, in the absence of a specimen compared directly to the type of *unicolor*, we could not rule out the possibility that the tape recordings from Cajabamba represented not *unicolor* but instead "an undescribed species of *Scytalopus*". Indeed, in the absence of a specimen, we cannot rule out such a possibility (which, admittedly, even the author of this suggestion regarded as low). In view of the low species diversity of *Scytalopus* from the western cordillera of northern Peru, and in recognition that under any circumstances the probabilities would be extraordinarily small that two independent parties (Coopmans; and Webster and Rowlett) would happen upon a previously unknown species of *Scytalopus* at the type locality of *unicolor*, we believe that our equation of these tape recordings with *unicolor* is the only rational hypothesis. One might propose the existence of a virtually unlimited number of previously undetected taxa of *Scytalopus*, but our contention would be that such suggestions may safely be put aside unless and until such time as the notion is positively supported by tangible evidence, rather than speculation.

Vocalizations

Although our sample size is small (songs and calls of three individuals), the material is consistent. The song of nominate *unicolor* (n = 3) (Fig. 1 D) is a simple phrase of 4-6 notes, the first overtone loudest, *c.* 2,400 Hz, the fundamental and higher overtones barely audible, each note becoming shorter and the pace increasing through the phrase, which lasts 0.3-0.5 s and is repeated at 1 s intervals.

Both *latrans* (n = 55) and *subcinereus* (n = 49) have simple songs of single,

endlessly repeated notes (Fig. 1 A-C), with at least three distinct harmonics, the fundamental and the first overtone being variously the loudest; east slope birds referred to *latrans* (n = 25) differ by always having the fundamental loudest and by having barely audible overtones. Songs of east slope birds and *subcinereus* often begin with rhythmic phrases. These are occasionally repeated a number of times, but usually the phrases become increasingly longer and the intervals shorter, soon becomeing a repetition of a single note at constant pace, which varies from four to eight notes per s, fastest when the bird appears most excited. There is little or no geographical

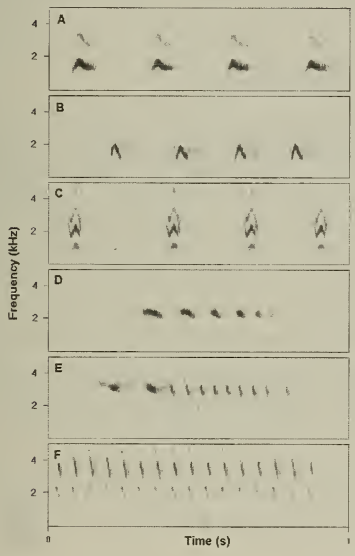

Figure 1. Songs of *Scytalopus* tapaculos. (A) *S. l. latrans*, Cotopaxi, w Ecuador; (B) *S. latrans*, Napo, e Ecuador; (C) *S. latrans subcinereus*, Loja, sw Ecuador; (D) Nominate *S. unicolor*, near Cajabamba (type locality), east slope of West Andes, s Cajamarca, nw Peru; (E) *S. acutirostris*, Huánuco, c Peru; (F) *S. parvirostris*, Pasco, c Peru. A-C and E recorded by NK, D by PC, F by TSS.

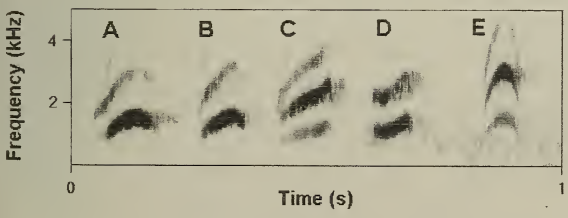

Figure 2. Calls of *Scytalopus* tapaculos. (A) *S. l. latrans*, Cotopaxi, w Ecuador; (B) *S. latrans*, Morona-Santiago/Azuay boundary, se Ecuador; (C) *S. latrans subcinereus*, Azuay, sw Ecuador; (D) *S. latrans subcinereus*, between Llama and Huambos, Pacific slope near crest of the Andes, s Cajamarca, nw Peru; (E) Nominate *S. unicolor*, near the type-locality in s Cajamarca, nw Peru. A-D recorded by NK, E by PC.

variation in the songs and calls of each of these forms.

The song of *unicolor* (Fig. 1 D) is only slightly higher-pitched than that of high-pitched individuals of *latrans* and *subcinereus* (Fig. 1 A-C), and is distinctly lower-pitched than songs of *acutirostris* and *parvirostris* (Fig. 1 E-F). The pace and rhythm remains fairly constant, even at high excitement such as after playback of song.

The contact call of *unicolor* (n = 3) (Fig. 2 E) is a single note, rising and falling symmetrically like an inverted U, higher-pitched (loudest at 2.5-3 kHz) than calls of *latrans* (n = 40) (Fig. 2 A-B) and *subcinereus* (n = 18) (Fig. 2 C-D) (both loudest at 1.5-2.5 kHz), and lacks the slow rise in pitch to near the end of the note, so characteristic of calls of those taxa.

Taxonomy

On the basis of the strong vocal differences between *unicolor* and the other three taxa, we suggest that *latrans*, *subcinereus*, and *intermedius* be ranked as a species, *S. latrans* (Blackish Tapaculo), distinct from a monotypic *S. unicolor* (Unicolored Tapaculo). We acknowledge (as did Krabbe & Schulenberg 1997:58) that birds we refer to as *S. latrans* might comprise two or more (allopatric or parapatric) species. The vocalizations of *S. unicolor* are so distinctive that they do not indicate which taxon might be its closest relative. There is a striking resemblance in pattern to the song of a population found on the east slope of the Andes in central Peru (Fig. 1 E). The nomenclature of the birds from central Peru is problematic; Fjeldså & Krabbe (1990) referred to these birds as an "unnamed species", although we follow the arguments outlined by Krabbe & Schulenberg (1997) for calling them *acutirostris*. Nomenclature aside, the resemblance in song between *unicolor* and *acutirostris* may be purely coincidental. We believe that determination of phylogenetic relationships among taxa of *Scytalopus* will best be resolved through the application of genetic studies.

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A note on the correct type of *Macabra* Bonaparte, 1854 (Strigidae)

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Macabra as a generic (or subgeneric) name has been used recently by several authors. Wolters (1975-82: 71) listed *Macabra* as a genus including White-throated Screech-Owl *Otus albogularis*, Bare-shanked Screech-Owl *Otus clarkii* and Rufescent Screech-Owl *Otus ingens*. More recently, König *et al.* (1999: 35) stated: "We treat the American screech owls *Otus* as members of subgenera *Megascops* and *Macabra*, as they differ from Old World scops owls in having two songs." They also listed *Macabra albogularis* as a synonym of *Otus albogularis* (1999: 279)

The history of the name *Macabra* is complex. It was first used by Bonaparte (1854a: 112), where it is a *nomen nudum*. Bonaparte used it again in the same year (1854b: 541), on that occasion listing a number of species: "*hylophila* Temm.; *fasciata* Vieill.; *suinda* Vieill.; *melanota* Vieill.; *cayanensis* Gm.; and *albigularis* Cassin." These names include species from several different modern genera – *Strix* in the case of Rusty-barred Owl *Strix hylophila* Temminck, 1825 (1825: pl. 373); *Asio* in the case of *Strix suinda* Vieillot, 1817 (1817: 34) (= Short-eared Owl subsp. *Asio flammeus suinda*); *Pulsatrix* in the case of "*melanota* Vieill." (= *Noctua melanota* Tschudi, 1844 (1844: 266) = Band-bellied Owl *Pulsatrix melanota*); and *Otus* in the case of